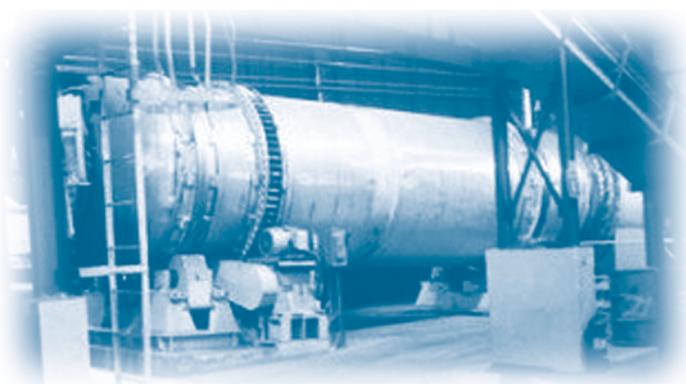


OIT's financial assistance programs help move energy-saving ideas and technologies past some of the early hurdles to development and demonstration.

Financial Assistance



The NICE³ program demonstrated that indirect-fired IDEX kilns provide secondary aluminum smelters with higher-quality feedstock.

The Inventions & Innovations (I&I) and National Industrial Competitiveness through Energy, Environment, and Economics (NICE³) programs work closely with the Industries of the Future to provide financial assistance to support stages of technology that research and development solicitations omit.

The Inventions and Innovation program provides financial assistance to inventors and small businesses at two levels: Category 1 funds up to \$40,000 for conceptual ideas, and the competition will be restricted to specific topics considered priorities by DOE. The Category 2 portion will fund up to \$200,000 for more developed inventions moving toward prototype development or commercialization.

OIT also provides grants to help fund technology **demonstrations** through its National Industrial Competitiveness through Energy, Environment and Economics (NICE³) program. The (NICE³) program funds up to \$525,000 (50% cost sharing is required) for the first commercial demonstration of innovative industrial technologies.



Inventions and Innovation

(www.oit.doe.gov/inventions)

INDEPENDENT INVENTORS AND SMALL BUSINESSES

OIT's Inventions and Innovation program (I&I) provides financial and technical assistance to independent inventors and small companies that solve an energy-related problem or develop an innovative energy-saving technology.

I&I provides financial assistance at two levels: up to \$40,000 for technologies in early-stage development or up to \$200,000 for those in late-stage development. Ideas that have significant energy-savings and commercial market potential in industry, power, transportation, or buildings are chosen for financial support through a competitive solicitation process. I&I is particularly interested in projects in the nine OIT Industries of the Future.

OIT provides overall project assistance in the form of commercialization planning, work guidance, a market assessment of the innovation, and access to regional service providers. The assistance can include helping innovators find technical partners, commercial sponsors, business plan resources, and financial resources.

To date, more than 500 inventions have received financial support from DOE, and nearly 25% of these have reached the marketplace. Cumulative sales of these inventions have reached more than \$710 million, resulting in energy savings of 0.6 quadrillion Btus.



The Inventions and Innovation program is working with members of the forest products industry to develop a more energy-efficient dryer, called the Delta T Dryer.

Five Regional Resource Centers for Innovation

Centers help grantees to

- Find technical partners, manufacturers, licensing partners, and marketing specialists
- Link with regional, state, and local organizations that promote economic development
- Locate commercial sponsors
- Support preparation of business and project plans
- Leverage additional funding

1. Richland, WA
2. Idaho Falls, ID
3. Golden, CO
4. Oak Ridge, TN
5. Washington, DC

Inventions and Innovation Program Support and Resources

- **Technical evaluation of your idea**
- **Mentoring for project development planning and management**
- **Regional training and learning centers for business planning**
- **Regional, state, and local level support for economic development**
- **Incubation centers specializing in small start-up, energy-related technology**
- **Internet sites and information relevant to energy-related innovations**
- **Technology conferences and trade shows**
- **Forums for financial investors with particular interest in energy-related businesses**



NICE³ PROGRAM GOALS

- Accelerate industrial demonstration, deployment, and dissemination of energy-efficient technology
- Implement efficiency improvements in processes, material inputs, and waste streams
- Demonstrate successful applications of innovative, clean manufacturing techniques in conjunction with energy-efficient technologies
- Target technologies, processes, and procedures that are transferable to a broad range of industrial applications
- Enhance U.S. industrial competitiveness

NICE³

NATIONAL INDUSTRIAL COMPETITIVENESS THROUGH ENERGY, ENVIRONMENT AND ECONOMICS (NICE³)

(www.oit.doe.gov/nice3)

TECHNOLOGY DEMONSTRATION PARTNERSHIPS

OIT's NICE³ program provides grants to state and private sector partnerships to demonstrate emerging, energy-efficient technologies that will benefit the Industries of the Future. The program provides up to \$525,000 (50% cost sharing is required) for the first commercial demonstration of innovative industrial technologies that reduce energy consumption, waste generation, and operating costs. Applications must be submitted by an authorized state agency with an appropriate industrial partner.

The NICE³ program emphasizes funding projects within the following OIT focus industries: Agriculture, Aluminum, Chemicals, Forest Products, Glass, Metalcasting, Mining, Petroleum, and Steel. Since OIT is part of the Office of

Energy Efficiency and Renewable Energy (EE/RE), consideration will also be given to projects that involve non-OIT focus industries and industrial processes in the buildings, transportation, and power sectors.

In the eight years since NICE³ was initiated, 48 states and territories have submitted 560 proposals. To date, the program has sponsored 85 projects, 23 of which have been fully commercialized.

OIT FINANCIAL ASSISTANCE PROGRAMS

Financial Assistance Support Resources:

- Mentoring for project development planning and management
- Regional state and local level support for economic development
- Web sites with information and links relevant to energy-related innovations
- Technology conferences and trade shows
- Forums for financial investors with particular interest in energy-related business
- Market assessment for the technology



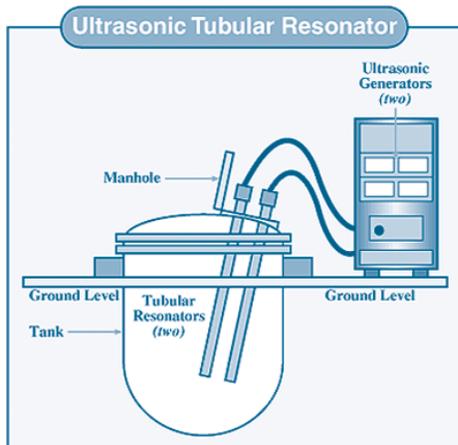
INNOVATIVE PLATING BARREL MINIMIZES WASTE

Whyco Technologies, Inc., a metal finishing and electroplating company, developed an advanced plating barrel to improve current flow and increase solution transfer. With the assistance of a NICE³ grant, Whyco began producing and marketing its barrel, which can increase plating productivity by 40% and decrease loss due to chemical "drag out" by 60%. Since June 1997, electroplating companies have purchased more than 750 of the energy-saving barrels.

INDUSTRY	I&I	NICE ³
Agriculture	<ul style="list-style-type: none"> • Continuous Cascade Fermentation System • Stalk and Root Embedding Plow 	
Aluminum	<ul style="list-style-type: none"> • Aluminum Roofing System 	<ul style="list-style-type: none"> • Aluminum Scrap Decoater
Chemicals		<ul style="list-style-type: none"> • Powder Paint Coating System • Ultrasonic Tank Cleaning
Forest Products	<ul style="list-style-type: none"> • DELTA T Dryer Control System • Lignin Separation and Epoxide-Lignin Manufacturing 	<ul style="list-style-type: none"> • Chemical for Increasing Wood Pulping Yield
Glass	<ul style="list-style-type: none"> • Electric Rotary Glass Furnace • Glass Fiber Manufacturing 	
Metalcasting	<ul style="list-style-type: none"> • Laminated Object Manufacturing • Reactive Sintered Nickel Aluminide 	<ul style="list-style-type: none"> • Process to Recover and Reuse Sulfur Dioxide
Mining		<ul style="list-style-type: none"> • Magnetic Elutriation for Clean and Efficient Processing of Iron Ore
Petroleum Refining	<ul style="list-style-type: none"> • Sulfide Reduction and Increased Oil Recovery 	<ul style="list-style-type: none"> • Robotics Inspection System for Storage Tanks
Steel	<ul style="list-style-type: none"> • Portable Ultrasonic Inspection System for Testing Tubular Goods • Recovery of Acids and Metal Salts from Pickling Liquors 	<ul style="list-style-type: none"> • Hot-Dip Batch Galvanizing • Hydrochloric Acid Recovery System

NICE³ PROJECT SELECTION CRITERIA

- **Technical Feasibility and Innovation**
- **Commercialization and Market Potential**
- **Energy Savings and Associated Benefits**
- **Statement of Work**
- **Applicant Capabilities**



ULTRASONIC TANK CLEANING PROJECT

Chemical and pharmaceutical companies have long used solvents to clean tanks. Many of these solvents emit volatile organic substances both during the cleaning process and during subsequent incineration of the waste. Now companies have a viable alternative for tank cleaning: the use of the power of sound.

TELESONIC Ultrasonics of New Jersey has successfully demonstrated, using NICE³ funding, the new Ultrasonic Tubular Resonator system to clean tanks at the DuPont-Merck Pharmaceutical facility in Deepwater, N.J. The successful demonstration showed an 80% reduction in solvent waste generated as well as reduced energy use, increased worker safety, and reduced downtime for tank cleaning. TELESONIC is now actively marketing and selling the ultrasonic systems throughout the country.

Competitive Solicitations

The Inventions and Innovation and NICE³ grants are awarded using a competitive solicitation that include the following steps:

- Companies can submit short “pre-proposals” (two pages maximum) describing their ideas to:
DOE Golden Field Office
1617 Cole Blvd., 17-3
Golden, CO 80401
- The submitter receives a quick response regarding the idea’s program relevance and information on how to submit a proposal for detailed review.
- DOE announces the RFP in the *Commerce Business Daily* and on the DOE Web site and makes the solicitation package available.
- For I&I funding, proposers submit proposals to the DOE Golden Field Office.
- For NICE³ funding, applicants present their innovative technology ideas to various state government agencies for review. State offices then partner with the firms offering the most promising concepts and submit proposals to OIT for possible NICE³ funding.
- After detailed review, DOE awards financial assistance grants to winning applicants based on merit and available funding.

The I&I and NICE³ programs select for funding those grant applications that demonstrate the greatest innovation, market, and economic development potential and save the greatest amount of energy.